

**REMARKS**

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the remarks and amendments herewith. The Examiner is thanked for withdrawing the double patenting rejection and indicating that claims 37-69 are allowed.

**I. THE ART REJECTIONS ARE OVERCOME**

Claim 70 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Kim et al. (US 5,344,676). Claim 72 was rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Spiller (US 3,754,975). Claim 71 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kim et al. (US 5,344,676). The rejections are respectfully traversed and will be addressed in turn.

It is respectfully submitted that a two-prong inquiry must be satisfied in order for a Section 102 rejection to stand. First, the prior art reference must contain **all** of the elements of the claimed invention. *See Lewmar Marine Inc. v. Barient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Second, the prior art must contain an enabling disclosure. *See Chester v. Miller*, 15 U.S.P.Q.2d 1333, 1336 (Fed. Cir. 1990). A reference contains an enabling disclosure if a person of ordinary skill in the art could have combined the description of the invention in the prior art reference with his own knowledge of the art to have placed himself in possession of the invention. *See In re Donohue*, 226, U.S.P.Q. 619, 621 (Fed. Cir. 1985).

The Examiner is also respectfully reminded that for a Section 103 rejection to be proper, there must be some prior art teaching which would have provided the necessary incentive or motivation for modifying the reference teachings to arrive at the claimed invention. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (BPAI 1993). Further, the Examiner is respectfully reminded that "obvious to try" is not the standard under 35 U.S.C. §103. *In re Fine*, 5 U.S.P.Q. 2d 1596, 1599 (Fed. Cir. 1988). And, as stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification."

And, for the Section 103 rejection to be proper, **both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants' disclosure.** *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). Furthermore, the

Examiner is also respectfully reminded that MPEP 2143.01 mandates that for a Section 103 rejection, there must be some suggestion or motivation to modify reference teachings, and, that MPEP 2143.02 further mandates that for a section 103 rejection, there must be a reasonable expectation of success.

Applicants respectfully submit that the references relied on in the Office Action fails to provide any teaching or suggestion of the present invention. Furthermore, the cited references provide no motivation to modify the teachings of those references or any expectation of success by so modifying.

Claim 70 relates to a method of depositing a material in which, *inter alia*, the rate of feeding the material solution, the electric field strength and the temperature gradient are configured such that the droplets decompose and/or react prior to reaching the substrate so as to form a powder.

Applicants respectfully submit that there is no disclosure of such a method in Kim *et al*. In Kim *et al* (see Figure 5 and column 4, lines 46 to 56), a method is described for forming a powder. In this method, however, a spray of nanodrops is directed through a heated zone of uniform temperature as provided by a heater (42), and not a temperature gradient as required by the claimed invention. There is absolutely no disclosure or suggestion in Kim *et al* of the formation of a powder by directing a stream of droplets of a material solution through a temperature gradient.

The Office Action alleges that Kim *et al* discloses the formation of a powder in relation to the embodiments of Figures 1 to 4, and is specifically relying on the disclosure at column 3, line 23, which is understood to actually refer to the disclosure of the formation of nanoparticles at column 2, line 23. Applicants respectfully disagree.

In the embodiments of Figures 1 to 4, Kim *et al* describes only the formation of thin films. This is clearly disclosed, for example, at column 3, lines 61 to 63 and column 4, lines 16 to 20. There is no disclosure whatsoever in relation to Figures 1 to 4 of the formation of powders.

This is further clearly evidenced by the fact that, in the embodiments of Figures 1 to 4, Kim *et al* discloses the use of a patterned mask (30). It is submitted that the use of the patterned mask (30) would serve no purpose whatsoever in relation to the formation of powders, but only films, and the skilled person would not have contemplated otherwise.

In regards to the disclosure at column 2, line 23 to which the Office Action has specifically referred, this disclosure relates only to the identification of the base compound. This disclosure provides no teaching to the use of the embodiments of Figures 1 to 4 in Kim *et al* in the formation of powders. As set out hereinabove, the embodiments of Figures 1 to 4 in Kim *et al* are specifically adapted to provide only for the deposition of thin films.

Accordingly, the invention as claimed in claim 70 is clearly novel over Kim *et al*. And, Applicants again re-iterate that this very distinction over Kim *et al* was accepted in the prosecution of the parent patent application (now US patent no 6,331,330 – claim 32).

Turning to the rejection of claim 72, it is respectfully submitted that claim 72 provides a method of depositing a material in which, *inter alia*, a decreasing temperature gradient is provided from the surface of a substrate to an outlet.

Spiller makes no disclosure or suggestion of such a method. In Spiller, a non-metallic substrate (18, 18'), which is supported by a moving substrate support (13, 13'), is heated to an elevated temperature and coated with a metal salt, which decomposes to provide a metallic deposit [see, for example, column 3, lines 58 to 62].

Contrary to the allegations in the Office Action, the fact that the substrates (18, 18') are heated to an elevated temperature does not result in a temperature gradient in the manner as required by the claimed invention.

In Spiller, as the substrates (18, 18') are moved, as embodied along a track (11), the substrates (18, 18') manifestly must be heated from the surrounding environment, and, in this mode of heating, the environment must be hotter than the substrates (18, 18') in order to effect heat transfer from the environment to the substrates (18, 18').

The Office Action is continuing to allege that Spiller inherently provides a decreasing temperature gradient from the surface of the substrates (18, 18'), but this is absolutely not the case. Where the environment is hotter than the substrates (18, 18'), there manifestly cannot be a decreasing temperature gradient away from the surface of the substrates (18, 18') as required by the claimed invention.

Accordingly, the invention as claimed in claim 72 is clearly novel over Spiller.

Turning now to the rejection under Section 103, Applicants respectfully submit that claim 71 provides a method of depositing a material in which *inter alia* an electric field is generated

electrostatically to attract droplets towards a substrate and the electric field is maintained for at least part of the time during which the deposited material is cooled.

The Office Action has acknowledged that Kim *et al* fails to disclose the maintenance of the electric field during cooling, but continues to allege that this is an obvious variation of the method of Kim *et al*, in order to overcome problems associated with providing for continued attraction of the delivered nanodrops and maintaining the deposited material on the surface of the substrate. Applicants respectfully disagree.

It is respectfully submitted that the skilled person would have had no such understanding as alleged in the Office Action, and, while the skilled person may possibly have greater knowledge than the teaching of Kim *et al*, the Office Action has failed to demonstrate that the proposed modification of Kim *et al* was within the common general knowledge of the skilled person. It is submitted that the Office Action's allegation is, in fact, impermissibly motivated by a hindsight analysis of Kim *et al*.

Furthermore, Kim *et al* simply does not allow for the modification as proposed by the Office Action, since in Kim *et al*, the high voltage (HV) which generates the electric field also actuates the spray unit (4) [see, for example, column 3, lines 26 to 32], and, by maintaining the high voltage during the cooling of the substrate, a spray would continue to be delivered, and yet the thermal environment would not be such as to achieve the required deposition.

Accordingly, the invention as claimed in claim 71 is clearly not obvious over Kim *et al*.

Therefore, for all of the reasons described above, reconsideration and withdrawal of the rejections of the application under 35 U.S.C. §102(b) and §103(a) are respectfully requested.

#### **REQUEST FOR INTERVIEW**

If any issue remains as an impediment to allowance, prior to issuance of any paper other than a Notice of Allowance, an interview, is respectfully requested, with the Examiner his supervisor, especially as claims 37-69 are deemed allowable, and, the Examiner is respectfully requested to contact the undersigned to arrange a mutually convenient time and manner for such an interview.

**CONCLUSION**

In view of the remarks herein the application is in condition for allowance.  
Reconsideration and withdrawal of the rejections of the application, and prompt issuance of a notice of allowance is respectfully requested.

Respectfully submitted,  
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